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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/311,070	05/13/1999	YOSHIHARU HIRAKATA	0756-1971	9732
31780	7590	10/24/2003	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			NGUYEN, DUNG T	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/311,070

Applicant(s)

HIRAKATA ET AL.

Examiner

Dung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10, 11 and 25-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-7, 10, 11, 25-40, 42 and 44 is/are allowed.
- 6) ☒ Claim(s) 1-4, 41 and 43, 45-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 15 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicants' amendment dated 07/15/2003 has been received and entered.

Applicant's arguments with respect to claims 1 and 3 have been considered but are moot in view of the new grounds of rejection as follow:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaya et al., JP 07-230101, in view of Murade et al., US Patent No. 6249327.

Regarding claims 1-4, Masaya et al. disclose an active-matrix LCD (figure 11) comprising:

- a switching element (thin film transistor TFT);
- a pixel electrode (410) connected to the switching element;
- a first reflective layer (a dielectric multi-layer film 409) contacted with the pixel electrode;
- a liquid crystal layer (414) inherently sealed between a pair of substrate (401, 411).

Although Masaya et al. do not explicitly disclose a thickness of the pixel electrode being in the range of 50.5nm to 88.4nm, Murade et al. do disclose a thickness of the pixel electrode can be formed in the range 50 to 200 nm (col. 16, ln. 10). Thus, such disclosed range in Murade et

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al. makes possible the claimed range of 50.5nm to 88.4nm, and overlapping ranges are at least obvious. In re Malagari, 499 Fed.2d 1297, 182 USPQ 549 CCPA 1974.

3. Claims 41 and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al., US Patent No. 6,108,056, in view Masaya et al., JP 07-230101.

Regarding claims 41 and 44-45, Nakajima et al. disclose an active-matrix LCD (figure 8) comprising:

- a semiconductor substrate (101);
- an insulating layer (114);
- a reflection metal film (116);
- a reflection layer (117);
- a pixel electrode (118);

However, Nakajima et al. do not disclose the reflection layer comprising a dielectric multi-layer film. Masaya et al. do disclose a dielectric film can be a multi-layer film (e.g., multilayer reflecting mirror, 409) as shown in figure 11. Therefore, it would have been obvious to one skilled in the art at the time of the invention made to modify the Nakajima et al. device having a multi-layer dielectric film as shown by Masaya et al., since it is a common practice in the art to obtain a bright clear display image (see detailed description, paragraph [005]).

4. Claims 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al., US Patent No. 6,108,056, in view Masaya et al., JP 07-230101, further in view of Murade et al., US Patent No. 6249327.

The modification to Nakajima et al. does not disclose the pixel electrode thickness within a range 55.5 to 88.4 nm. Murade et al. do disclose a thickness of the pixel electrode can be

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formed in the range 50 to 200 nm (col. 16, ln. 10). Thus, such disclosed range in Murade et al. makes possible the claimed range of 50.5nm to 88.4nm, and overlapping ranges are at least obvious. In re Malagari, 499 Fed.2d 1297, 182 USPQ 549 CCPA 1974.

Allowable Subject Matter

5. Claims 5-7, 10-11 and 25-40 and 44 are allowed.
6. Claim 42 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art suggests or discloses a reflection layer on a transparent conductive common electrode and a pixel electrode formed on the reflection layer to form an auxiliary capacitance as set forth in claims 5 and 10. In addition, a reflection layer comprising at least first, second, third and fourth laminated dielectric layers with a material selected from the specific group as set forth in claims 25, 27, 31, 37-38 and 42.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 703-305-0423. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7726 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

DN
10/20/2003



Dung Nguyen
Patent Examiner
GAU 2871